CENTER SERIES

- CENTER/SPOT DRILL IN MILLING AND TURNING

Features Description

The precise eccentricity only ±0.008mm enhences the toollife of taps and drills, Special carbide inserts with unique geometry improve the strength of insert tip.

Center Drill: ø1.6 - ø10 mm
Spot Drill: ø8 - ø16 mm

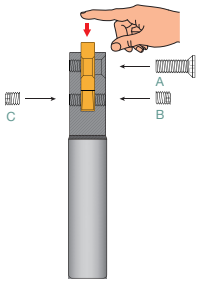
Features

- Available in materials: P K M N S H
- Cost **300~500%** SAVING
- Applicable Machines: Milling / Turning / Drilling
- Efficiency **300%** UP
- Durability **300%** UP

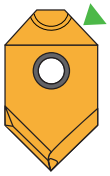
Design

Center point eccentricity ±0.008mm

1.Plug-and-clamp self-centering design



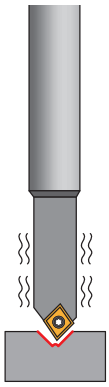
2.Back taper



Gives awesome stabilities that conduces to excellent verticality precision.

Product Introduction

Other brands

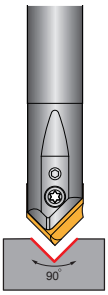


Big eccentricity tolerance minimum ±0.3 mm

1. To use this kind of chamfer tool for centering processes is likely break drills and taps often.
2. This chamfer tool works with single flute only, it performs low speed.

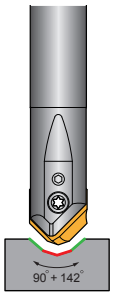
YIH TROUN

23 Inserts



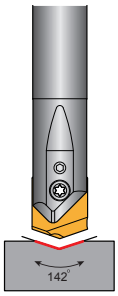
1. Designed with chip breaking teeth both on the front and back side of indexable inserts.
2. The most popular spot drill which has 45°chamfer angle and suitable in various applications: such as spot positioning, V-shape grooving and engraving.
3. Can also be used in round-hole and side corner chamfering with 2 effective flutes.

A23 Inserts



1. Designed with two point angles 90°+ 142°.
2. It performs 45° chamfering and 142° spot positioning in one step.

B23 Inserts

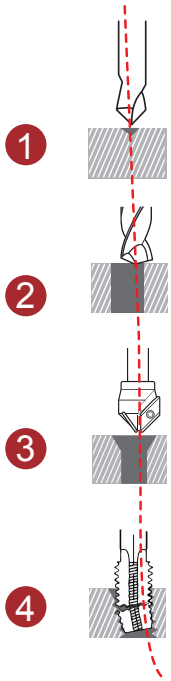


142°point angle is perfect for all different size of drills.

Subtle eccentricity tolerance maximum is ±0.008 mm

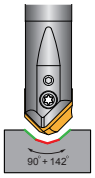
Operations prior to small / long depth drills and Tapping

Imprecise spot drills



1. Big eccentricity tolerarnce
2. Resulting in off centre drilling, poor hole quality and reduced tool life
3. Unequal chamfering, poor surface finish and reduced tool life
4. Regular tap breakage and scrap components

Y.T. accurate spot drills

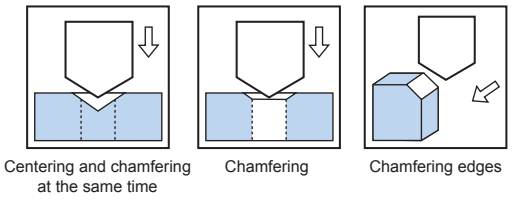


1. Y.T. 142° spot drill with 45° chamfer angle (Finish two operations in one)
2. Accurate drilled hole, good finish and tool life

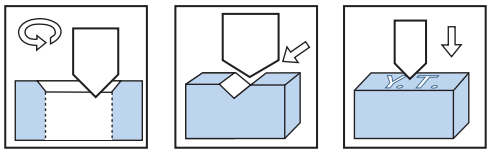
1 Process reduced

3. Resulting in best tap tool life and thread quality

Y.T. 90° Spot Drill With Multipurpose Function



Centering and chamfering at the same time | Chamfering | Chamfering edges



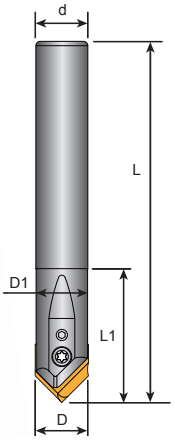
Chamfering large diameter holes | Cutting V grooves | Engraving

Can be used in M/C and drilling machine

PRODUCT SPECIFICATIONS

Spot Drill Toolholders

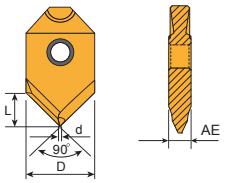
- Inserts P. 206 - 207
- Cutting Data P. 208 - 212



13

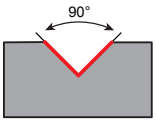
Order Code	Dimensions (mm)						KG	Inserts 23 A23 B23	Screw	Key
	D	D1	d	L	L1	L2				
13-0808-60	8	7.9	8	60	20	-	0.06	0802	C02506 S025025	T08P L013
13-0808-85				85			0.07			
13-1008-60		9.9	10	60			0.09			
13-1010-65	10			65			0.09	1002	C03008 S02503	T09P L013
13-1010-100				100			0.12			
13-1010-150				150			0.12			
13-1210-65			12	65			0.12			
13-1212-80	12	11.9		80	30		0.12	1203	C03010 S0304	T09P L015
13-1212-110				110			0.15			
13-1212-160				160			0.18			
13-1612-80			16	80			0.21			
13-1616-100	16	15.8		100	35		0.21	1603	C03512 S0405	T10P L02
13-1616-130				130			0.26			
13-1616-180				180			0.36			

23 Inserts

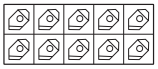


Tolerances (mm)

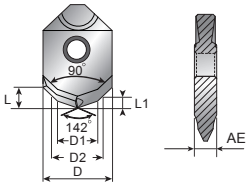
AE : + 0.01 / – 0.02



Dimensions (mm)				
D	d	L	AE	angle
8	0.7	4	2.0	90°
10	0.8	5	2.5	
12	0.9	6	3.0	
16	1.0	8		

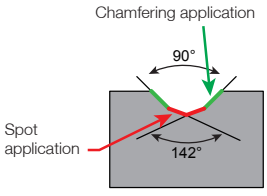
Inserts	Order Code	Grades										
		Carbide					Cermet			Uncoated		E / ME
		C125	B350	C350	F20	F30	CE25	CE100	CE60	K10	CE	
	23-0802-90-E				■							 Inserts 10 PCS / Box
	23-1002-90-E				■							
	23-1203-90-E				■							
	23-1603-90-E				■							
	23-0802-90-ME		◎	■	■							
	23-1002-90-ME		◎	■	■							
	23-1203-90-ME		◎	■	■							
	23-1603-90-ME		◎	■	■							

A23 Inserts

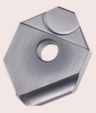
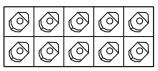


Tolerances (mm)

AE : + 0.01 / – 0.02

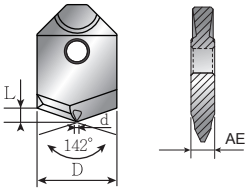


Dimensions (mm)							
D	L	D1	D2	L1	AE	M	angle
8	2.8	3.3	4.2	1.02	2.0	M4 x 0.7	90° 142°
10	3.5	4.2	5.25	1.25	2.5	M5 x 0.8	
12	4.2	5.0	6.3	1.55	3.0	M6 x 1.0	
16	5.6	6.8	8.4	1.97	3.0	M8 x 1.25	
16	5.1	8.5	10.5	2.46	3.0	M10 x 1.5	

Inserts	Order Code	Grades										
		Carbide					Cermet			Uncoated		ME
		C125	B350	C350	F20	F30	CE25	CE100	CE60	K10	CE	
	A23-0802-M4-ME		◎	■	■							 Inserts 10 PCS / Box
	A23-1002-M5-ME		◎	■	■							
	A23-1203-M6-ME		◎	■	■							
	A23-1603-M8-ME		◎	■	■							
	A23-1603-M10-ME		◎	■	■							

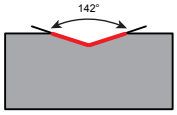
- ■ Steel ■ Stainless Steel ◎ Steel/Stainless Steel /Super alloy ■ Cast Iron ■ Aluminum ■ Steel/Cast Iron ◎ Steel/Stainless Steel/Cast Iron
- Prices and stocks are based on present conditions
- Please specify model numbers and the grade of inserts, ie.: A23-0802-M4-ME,B350

B23 Inserts

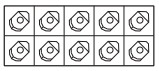


Tolerances (mm)

AE : + 0.01 / − 0.02



Dimensions (mm)				
D	d	L	AE	angle
8	0.7	1.28	2.0	142°
10	0.8	1.55	2.5	
12	0.9	1.86	3.0	
16	1.0	2.56		

Inserts	Order Code	Grades										ME
		Carbide					Cermet			Uncoated		
		C125	B350	C350	F20	F30	CE25	CE100	CE60	K10	CE	
	B23-0802-142-ME		◎									 Inserts 10 PCS / Box
	B23-1002-142-ME		◎									
	B23-1203-142-ME		◎									
	B23-1603-142-ME		◎									

- Steel Stainless Steel Steel/Stainless Steel /Super alloy Cast Iron Aluminum Steel/Cast Iron Steel/Stainless Steel/Cast Iron
- Prices and stocks are based on present conditions
- Please specify model numbers and the grade of inserts, ie.: B23-0802-142-ME,B350

Recommended Cutting Data And Insert Grades

- Recommended spot cutting speed in Vc (m/min), fz(mm/ tooth).
- For spotting the effective no. of teeth is calculated with 1 flute.

Material group	Cutting Speed Vc(m/min) Spotting	fz (mm/tooth) D: 8~10mm	fz (mm/tooth) D: 12~16mm	Grades ME	Grades E
1-2	50-70	0.10 0.13	0.11 0.14	B350/C350	-
3	50-70	0.10 0.13	0.11 0.14	B350/C350	-
4-5-6	45-60	0.08 0.10	0.10 0.12	B350/C350	-
7	25-30	0.06 0.08	0.06 0.08	B350	-
8-9	35-45	0.08 0.10	0.10 0.12	B350	-
10-11	35-40	0.07 0.09	0.09 0.12	B350	-
12-13	70-90	0.12 0.15	0.13 0.16	C350	-
14-15	60-80	0.10 0.14	0.10 0.15	C350	-
16-18	200-300	0.12 0.15	0.13 0.16	-	F20

How to Fit Inserts - Screw A.B.C.

Screwing the Insert

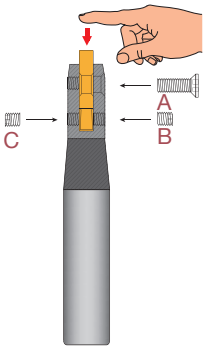
Step 1: • Put the insert into the slot of shank and press it with the finger
• Fully tighten the screw A first

Step 2: Half tighten the screw B on one side

Step 3: Half tighten the screw C on another side

Step 4: Fully tighten the screw B again (Important)

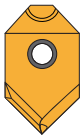
Step 5: Fully tighten the screw C again (Important)

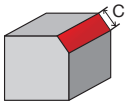


Standard spare parts

Insert dimension D (mm)	Screw A	Screw B/C	Key	Key
8	C02506	S025025	T08P	L013
10	C03008	S02503	T09P	L013
12	C03010	S0304	T09P	L015
16	C03512	S0405	T10P	L02

Recommended Cutting Data



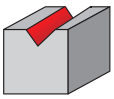


Side Chamfering

• For side chamfering the effective no. of teeth are 2 flutes.

Chamfering Application													
Materials		Steel		Heat Treatment		Stainless Steel		Inconel		Cast Iron		Aluminium	
Using Inserts		C350		C350		B350		B350		C350		F20	
Inserts	C	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)
ø8	1mm	4800	720	2000	240	2400	280	1600	190	3200	640	8000	2000
ø10	1mm	3800	570	1600	190	1900	220	1300	160	2550	510	6300	1500
	2mm	3800	450	1600	160	1900	190	1300	130	2550	400	6300	1260
ø12	1mm	3200	480	1300	150	1600	190	1050	125	2100	420	5300	1250
	2mm	3200	380	1300	130	1600	160	1050	105	2100	340	5300	1050
	3mm	3200	320	1300	100	1600	130	1050	85	2100	250	5300	850
ø16	1mm	2400	360	1000	120	1200	145	800	95	1600	320	4000	960
	2mm	2400	290	1000	100	1200	120	800	80	1600	255	4000	800
	3mm	2400	240	1000	80	1200	100	800	65	1600	190	4000	480
	4mm	2000	160	800	65	1000	80	600	50	1400	140	3500	420

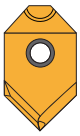
Recommended Cutting Data

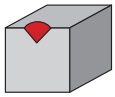


Grooving

V Groove Application													
Materials		Steel		Heat Treatment		Stainless Steel		Inconel		Cast Iron		Aluminium	
Using Inserts		C350		C350		B350		B350		C350		F20	
Inserts	Cut Depth	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)
ø8	2mm	4800	380	1200	95	2400	140	1400	85	4000	640	8000	2400
ø10	2mm	3800	300	950	75	1900	115	1100	65	3200	500	6400	1920
	3mm	3800	230	950	55	1900	750	1100	45	3200	380	6400	1500
ø12	2mm	3200	260	800	65	1600	95	900	55	2650	420	5300	1600
	3mm	3200	190	800	50	1600	65	900	35	2650	320	5300	1300
ø16	2mm	2400	190	600	50	1200	70	700	40	2000	320	4000	1200
	3mm	2400	145	600	35	1200	50	700	30	2000	240	4000	960
	4mm	2400	100	600	25	1200	25	700	20	2000	200	4000	800

Recommended Cutting Data

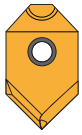


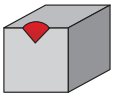


Spotting and Chamfering
in one step

Spot Application													
Materials		Steel		Heat Treatment		Stainless Steel		Inconel		Cast Iron		Aluminium	
Using Insert		C350		C350		B350		B350		C350		F20	
Inserts	Cut Depth	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)
ø8	1mm	2000	300	800	95	1600	160	1000	100	2800	560	6000	1200
	2mm	2000	250	800	80	1600	120	1000	75	2800	490	6000	1050
	3mm	2000	250	800	80	1600	120	1000	75	2800	490	6000	1050
	4mm	2000	200	800	65	1600	80	1000	50	2800	420	6000	900
ø10	1mm	1600	240	650	80	1300	130	800	80	2200	440	4800	960
	2mm	1600	200	650	65	1300	100	800	60	2200	385	4800	840
	3mm	1600	200	650	65	1300	100	800	60	2200	385	4800	840
	4mm	1600	160	650	50	1300	65	800	40	2200	330	4800	720
	5mm	1300	130	500	40	1000	50	650	30	1900	285	4200	630
ø12	1mm	1300	200	550	65	1050	105	650	65	1850	370	4000	800
	2mm	1300	160	550	55	1050	80	650	50	1850	315	4000	700
	3mm	1300	160	550	55	1050	80	650	50	1850	315	4000	700

Recommended Cutting Data





Spotting and Chamfering
in one step

Spot Application													
Materials		Steel		Heat Treatment		Stainless Steel		Inconel		Cast Iron		Aluminium	
Using Inserts		C350		C350		B350		B350		C350		F20	
Inserts	Cut Depth	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)	S (rev/min)	F (mm/min)
Ø12	4mm	1300	130	550	45	1050	50	650	35	1850	280	4000	600
	5mm	1050	105	400	45	800	40	530	30	1600	240	3500	525
	6mm	1050	85	400	30	800	30	530	20	1600	200	3500	430
Ø16	1mm	1000	150	400	45	800	80	500	50	1400	280	3000	600
	2mm	1000	125	400	40	800	60	500	40	1400	245	3000	525
	3mm	1000	125	400	40	800	60	500	40	1400	245	3000	525
	4mm	1000	100	400	30	800	40	500	25	1400	210	3000	450
	5mm	800	80	300	25	600	30	400	20	1200	180	2600	390
	6mm	800	65	300	20	600	25	400	16	1200	150	2600	325
	7mm	800	65	300	20	600	25	400	16	1200	150	2600	325
	8mm	800	50	300	15	600	18	400	12	1200	120	2600	260